

REMARKS

Claims 1-11 are pending in the application. Claims 1, 2, 4, 6, 7 and 10 have been amended, and claim 11 is newly added. Reconsideration of the rejection and allowance of the pending application in view of the following remarks are respectfully requested.

As an initial matter, Applicant wishes to thank the Examiner for accepting the drawings filed on February 5, 2004, for acknowledging Applicant's claim for foreign priority and receipt of the certified copy of the priority document, and for considering all of the documents cited in the Information Disclosure Statement filed on May 5, 2004.

In the Office Action, the Examiner rejected claims 6 and 7 under 35 U.S.C. §112, 2nd paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Specifically, the Examiner asserted that the terminology "most sensitive" renders the claims indefinite. Applicant has amended claims 6 and 7 to recite that the alignment lens is more sensitive to an alignment error than all of the plurality of lens elements included in said first optical system, and more sensitive to an alignment error than all of the lens elements included in said objective optical system, respectively. Applicant respectfully submits that the amended claim language is sufficiently definite, and thus respectfully requests that the Examiner withdraw the 35 U.S.C. §112, 2nd paragraph rejection of claims 6 and 7.

In the Office Action, the Examiner rejected claims 1-8 and 10 under 35 U.S.C. §102(b) as being anticipated by Plummer et al. (U.S. Patent No.

6,122,115). Applicant respectfully traverses the rejection for at least the following reasons.

Applicant's independent claim 1 recites an objective optical system configured to be implemented in a tip of an endoscope which includes, inter alia, a first lens unit having a first lens barrel and a first optical system including a plurality of lens elements assembled in the first lens barrel, and a second lens unit having a second lens barrel, that is engaged to the first barrel, and a second optical system including a plurality of lens elements.

Plummer is directed towards an optical mounting assembly. Plummer discloses an embodiment of an optical mounting assembly 50, shown in Fig. 7, which includes an optical tube assembly 51 and lenses 58 and 59. See Figure 7 and col. 5, lines 42-46.

At pages 2-3 of the Office Action, the Examiner asserts that Figure 7 of Plummer shows an objective optical system which includes a first lens unit having a first lens barrel and a first optical system including a plurality of lens elements assembled in the first lens barrel, and a second lens unit having a second lens barrel and a second optical system including a plurality of lens elements. Applicant respectfully disagrees with the Examiner's assertion.

Applicant respectfully submits that Plummer's optical mounting assembly 50 does not include a second lens unit that has a second lens barrel and a second optical system including a plurality of lens elements. Rather, Applicant submits that Plummer's optical mounting assembly 50 only includes a single lens unit that has a single optical system (which includes lenses 58 and 59).

Thus, Applicant respectfully submits that Plummer fails to disclose (or even suggest) an objective optical system which includes a first lens unit having a first lens barrel and a first optical system including a plurality of lens elements assembled in the first lens barrel, and a second lens unit having a second lens barrel and a second optical system including a plurality of lens elements, as recited in Applicants' independent claim 1.

Applicant's independent claim 10 recites a method of assembling an objective optical system which includes, inter alia, forming a first optical system by assembling a first plurality of lenses in a first lens barrel. The first lens barrel is formed with a plurality of holes on a circumferential surface thereof. The plurality of holes allows access to a predetermined one of the first plurality of lenses in the first lens barrel. The method also includes forming a second optical system by assembling a second plurality of lenses in a second lens barrel, inserting rods through the plurality of holes to move the predetermined one of the first plurality of lenses in the first lens barrel to adjust an alignment thereof, and coupling the first lens barrel and the second lens barrel such that the first optical system and the second optical system have a common optical axis.

Applicant respectfully submits that Plummer's optical mounting assembly 50 does not include a second optical system formed by assembling a second plurality of lenses in a second lens barrel, as recited in Applicant's claim 10. Rather, Applicant submits that Plummer's optical mounting assembly 50 only includes a single optical system, which includes lenses 58 and 59.

Thus, Applicant respectfully submits that Plummer fails to disclose or suggest a method of assembling an objective optical system which includes forming a first optical system by assembling a first plurality of lenses in a first lens barrel, forming a second optical system by assembling a second plurality of lenses in a second lens barrel, and coupling the first lens barrel and the second lens barrel such that the first optical system and the second optical system have a common optical axis, as recited in Applicant's independent claim 10.

For at least these reasons, Applicant respectfully submits that Plummer fails to anticipate the inventions recited in Applicant's claims 1 and 10, and thus respectfully requests that the Examiner withdraw the 35 U.S.C. §102(b) rejection and allow claims 1 and 10.

Dependent claims 2-8 are also submitted to be in condition for allowance for at least the reasons set forth above with respect to independent claim 1, from which they depend.

Furthermore, Applicant's dependent claim 2 recites that the first lens unit is provided with a fixing unit that fixes the first optical system to the first lens barrel, and the fixing unit is interposed between the first lens barrel and the second lens barrel to define a clearance therebetween. Applicant respectfully submits that such features are not disclosed or suggested by Plummer.

Plummer discloses, at col. 5, lines 61-64, that the lens 59 may be mounted in an internal collar 57. At page 3 of the Office Action, the Examiner asserts that Plummer's internal collar 57 corresponds to Applicant's claimed fixing unit. Applicant respectfully disagrees.

Applicant respectfully submits that Plummer does not disclose that the internal collar 57 fixes an optical system to a lens barrel, as recited in Applicant's claim 2. Nor is the internal collar 57 interposed between a first lens barrel and a second lens barrel to define a clearance therebetween, as recited in claim 2. Rather, Applicant submits that Plummer's internal collar 57 is provided inside optical tube assembly 51, which is provided inside mounting sleeve 20, and does not define a clearance between the optical tube assembly 51 and the mounting sleeve 20.

Thus, Applicant respectfully submits that Plummer fails to disclose or suggest a fixing unit that fixes a first optical system to a first lens barrel, and which is interposed between the first lens barrel and a second lens barrel to define a clearance therebetween, as recited in Applicant's claim 2.

In the Office Action, the Examiner also rejected claims 1-7, 9 and 10 under 35 U.S.C. §102(b) as being anticipated by Dosaka (U.S. Patent No. 5,128,808). Applicant respectfully traverses the rejection for at least the following reasons.

Dosaka is directed towards a turret condenser for microscopes. Dosaka discloses a first turret 7 which is pivoted on a shaft 8 and has a plurality of holes 7a which accommodate optical elements 4, and a second turret 9 which is pivoted on the shaft 8 and has a plurality of holes 9a which accommodate optical elements 6. See Figure 2 and col. 4, lines 10-23 of Dosaka.

Applicant respectfully submits that Dosaka does not disclose or suggest an objective optical system which is configured to be implemented in a tip of an endoscope, as recited in Applicant's independent claim 1. Rather, Applicant

submits that Dosaka's turret condenser is designed to be used in a microscope and is thus structurally incapable of being implemented in a tip of an endoscope.

Further, at page 4 of the Office Action, the Examiner asserts that Dosaka's first turret 7 corresponds to Applicant's claimed first barrel, and that Dosaka's second turret 9 corresponds to Applicant's claimed second barrel. However, Applicant respectfully submits that Dosaka's second turret 9 is not engaged to the first turret 7. Rather, Applicant submits that the first turret 7 and second turret 9 independently rotate about the shaft 8.

Thus, Applicant respectfully submits that Dosaka fails to disclose or suggest an objective optical system configured to be implemented in a tip of an endoscope which includes a first lens unit having a first lens barrel, and a second lens unit having a second lens barrel engaged to the first barrel, as recited in Applicant's independent claim 1.

With respect to Applicant's independent claim 10, Applicant submits that Dosaka's turrets 7 and 9 do not include a plurality of holes on a circumferential surface thereof which allow access to a predetermined optical element in the turrets.

Thus, Applicant respectfully submits that Dosaka fails to disclose or suggest a method of assembling an objective optical system that is configured to be implemented at a tip of an endoscope which includes inserting rods through a plurality of holes on a circumferential surface of a first lens barrel to move a predetermined lens in the first lens barrel to adjust an alignment thereof, as recited in Applicant's independent claim 10.

For at least these reasons, Applicant respectfully submits that Dosaka fails to anticipate the inventions recited in Applicant's claims 1 and 10, and thus respectfully requests that the Examiner withdraw the 35 U.S.C. §102(b) rejection and allow claims 1 and 10.

Dependent claims 2-7 and 9 are also submitted to be in condition for allowance for at least the reasons set forth above with respect to independent claim 1, from which they depend.

Furthermore, with respect to claim 2, at page 4 of the Office Action the Examiner asserts that Dosaka's cover 22 corresponds to Applicant's claimed fixing unit. However, Applicant respectfully submits that Dosaka's cover is not interposed between Dosaka's first and second turrets 7 and 9 to define a clearance therebetween, as required by Applicant's Claim 2.

Thus, Applicant respectfully submit that Dosaka fails to disclose or suggest a fixing unit that fixes a first optical system to a first lens barrel which is interposed between the first lens barrel and a second lens barrel to define a clearance therebetween, as recited in Applicant's claim 2.

Applicant has added new dependent claim 11 for the Examiner's consideration. Claim 11 depends from claim 1 and recites that a threaded portion is provided on an inner surface of the first lens barrel which engages with a screw provided on an outer surface of the second lens barrel. Applicant respectfully submits that such features are not disclosed or suggested by the applied prior art.

Based on the above, it is respectfully submitted that this application is now

in condition for allowance, and a Notice of Allowance is respectfully requested.

SUMMARY AND CONCLUSION


Entry and consideration of the present amendment, reconsideration of the outstanding Office Action, and allowance of the present application and all of the claims therein are respectfully requested and now believed to be appropriate. Applicant has made a sincere effort to place the present invention in condition for allowance and believes that he has now done so.

Any amendments to the claims which have been made in this amendment, and which have not been specifically noted to overcome a rejection based upon the prior art, should be considered to have been made for a purpose unrelated to patentability, and no estoppel should be deemed to attach thereto.

Should an extension of time be necessary to maintain the pendency of this application, the Commissioner is hereby authorized to charge any additional fee to Deposit Account No. 19-0089.

Should the Examiner have any questions or comments regarding this response, or the present application, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully submitted,
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